

AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows:

Claims 1 through 46 (Canceled).

Claim 47. (Previously presented) A method for electrosurgically sealing tissue comprising the steps of:

providing an electrosurgical generator including an RF energy source and a controller that controls the operation of the electrosurgical generator, the electrosurgical generator having an output which couples to at least one electrode of a surgical instrument;

instructing the controller to activate the electrosurgical generator to generate an initial pulse of RF energy to tissue to measure a value of an electrical characteristic of the tissue in response to the applied initial pulse;

determining an initial set of pulse parameters for at least one subsequent pulse based on the initial pulse of RF energy to tissue; and

controlling the pulse parameters of individual pulses of further subsequent RF energy pulses in accordance with a change in the electrical characteristics of the tissue as determined from at least one characteristic of an electrical transient that occurs during at least one RF energy pulse.

Claim 48: Canceled

Claim 49. (New): A method as in claim 47, wherein the duration of the initial pulse of RF energy is about 100 milliseconds.

Claim 50. (New): A method as in claim 47, wherein the value of an electrical characteristic of the tissue is selected from a group consisting of an electric current transient and tissue impedance.

Claim 51. (New): A method as in claim 50, wherein the electric current transient is selected from a group consisting of a rate of change of an electric current transient, a rate of change of the tissue impedance, and phase rotation of voltage and current.

Claim 52. (New): A method as in claim 47, wherein the initial set of pulse parameters is selected from a group consisting of a magnitude of a starting power, a magnitude of a starting voltage, a magnitude of a starting current, RF power output, current, voltage and pulse width and duty cycle.

Claim 53. (New): A method as in claim 47, wherein the change in the electrical characteristics of the tissue is selected from electric current transient and tissue impedance.

Claim 54. (New): A method as in claim 53, wherein the electric current transient is selected from a group consisting of a rate of change of an electric current

transient, a rate of change of the tissue impedance, and phase rotation of voltage and current.

Claim 55. (New): A method as in claim 47, further comprising the step of determining if the tissue responded to the first pulse of RF energy prior to the step of applying at least one subsequent RF energy pulse.

Claim 56. (New): A method as in claim 47, further comprising the step of modifying predetermined parameters of the set of RF energy parameters in accordance with a control input from an operator.

Claim 57 (New): A method as in claim 47, further comprising the step of terminating generation of at least one of the subsequent RF energy pulses upon a determination that the electrical transient is absent.

Claim 58. (New): A method as in claim 47, wherein the step determining an initial set of pulse parameters further includes the step of using the measured value of an electrical characteristic of tissue to readout at least two or more RF energy parameters from an entry in one of a plurality of lookup tables.

Claim 59. (New): A method as in claim 58, wherein the RF energy parameters in one of the plurality of lookup tables includes power, start voltage, voltage decay and dwell time.

Claim 60. (New) A method as in claim 58, wherein the one of the plurality of lookup tables is selected manually or automatically, based on a choice of an electrosurgical tool or instrument.

Claim 61. (New) A method as in claim 47, wherein the at least one characteristic of an electrical transient is selected from a group consisting of electric current transient and tissue impedance.

Claim 62. (New): A method as in claim 61, wherein the electric current transient is selected from a group consisting of a rate of change of an electric current transient, a rate of change of the tissue impedance, and phase rotation of voltage and current.